

THE UNIVERSITY OF CHICAGO

1 3. The method of claim 1, wherein the step of dividing a
2 transaction into time frames comprises
3 dividing the transaction into time frames, one of the time
4 frames spanning one of the following transaction activities:
5 waiting for a consumer to begin a transaction;
6 greeting a consumer;
7 beginning a transaction;
8 selecting a form of payment;
9 swiping a card for a form of payment;
10 entering a security code for the form of payment;
11 identifying a product for purchase;
12 displaying a total cost for products identified
13 for purchase;
14 signing for a transaction; and
15 thanking a consumer his purchase.

007000" 49205950

1 4. The method of claim 1, wherein the step of dividing a
2 transaction into time frames comprises
3 dividing a transaction into time frames, each of the time
4 frames spanning one of the following activities:
5 waiting for a consumer to begin a transaction;
6 greeting a consumer;
7 beginning a transaction;
8 selecting a form of payment;
9 swiping a card for a form of payment;
10 entering a security code for the form of payment;
11 identifying a product for purchase;
12 displaying a total cost for products identified
13 for purchase;
14 signing for a purchase;
15 thanking a consumer his purchase;
16 surveying a consumer;
17 promoting an event;
18 applying for a credit card;
19 informing a consumer;
20 identifying a consumer;
21 interacting with a consumer; and
22 passing through an interstitial period.

1 5. The method of claim 1, wherein the step of dividing a
2 transaction into time frames comprises
3 dividing a consumer-product transaction into time frames.

1 6. The method of claim 5, wherein the step of dividing a
2 transaction into time frames comprises
3 dividing a bricks-and-mortar consumer-product transaction

4 into time frames.

1 7. The method of claim 5, wherein the step of dividing a
2 transaction into time frames comprises
3 dividing an e-commerce consumer-product transaction into time
4 frames.

1 8. The method of claim 1, wherein the step of dividing a
2 transaction into time frames comprises
3 dividing a consumer-service transaction into time frames.

1 9. The method of claim 1, wherein the step of determining
2 an ad for display in one of the time frames comprises
3 transmitting information about the transaction from the POS
4 location to an ad-management service;
5 determining on the ad-management service and based on the
6 information, an ad for display; and
7 receiving a response indicating the determined ad.

1 10. The method of claim 9, wherein the step of transmitting
2 comprises
3 broadcasting information to multiple ad-management services.

1 11. The method of claim 9, wherein the step of determining
2 an ad comprises
3 determining an ad, having an identifier; and
4 the step of receiving an indicative response comprises
5 receiving the identifier for the determined ad and not the ad
6 itself.

1 12. The method of claim 9, further comprising the step of

2 caching the indicative response.

1 13. The method of claim 9, further comprising the steps of
2 caching the indicative response and a targeting filter for
3 the response; and
4 subsequently applying the targeting filter to determine
5 whether the ad indicated by the response is still appropriate for
6 display.

1 14. The method of claim 1, wherein the step of determining
2 an ad for display comprises
3 prioritizing multiple ads competing for display, producing an
4 ad with highest priority;
5 determining the ad with highest priority as the ad for
6 display.

1 15. The method of claim 14, wherein the step of
2 prioritizing multiple competing ads comprises
3 setting the priority of an ad for display when the
4 transaction meets predetermined criteria (a "specific ad") higher
5 than the priority of an ad for display when no specific ad is
6 available.

1 16. The method of claim 14, wherein the step of
2 prioritizing multiple competing ads comprises
3 setting the priority of an ad that is for display without
4 regard to specifics of the transaction and that originated in an
5 ad-management service higher than the priority of an ad that is for
6 display without regard to specifics of the transaction but that
7 originated in a merchant.

1 17. The method of claim 14, wherein the step of
2 prioritizing multiple competing ads comprises
3 setting the priority of an ad having a duration of n time
4 units higher than the priority of an ad having a duration of less
5 than n time units.

1 18. The method of claim 14, wherein the step of
2 prioritizing multiple competing ads comprises
3 setting the priority of an interactive ad higher than the
4 priority of a non-interactive ad.

1 19. The method of claim 14, wherein the step of
2 prioritizing multiple competing ads comprises
3 setting the priority of an ad relating to an item identified
4 for purchase higher than the priority of an ad related not to an
5 item identified for purchase but to the POS location.

1 20. The method of claim 14, wherein the step of
2 prioritizing multiple competing ads comprises
3 setting the priority of an ad relating to the POS location
4 higher than an ad relating not to the POS location but to the time
5 of a transaction.

1 21. The method of claim 14, wherein the step of
2 prioritizing multiple competing ads comprises
3 setting the priority of an ad relating to the time of a
4 transaction higher than the priority of an ad relating not to the
5 time of a transaction but to the price of an item identified for
6 purchase.

1 22. The method of claim 14, wherein the step of
2 prioritizing multiple competing ads comprises

3 setting the priority of an ad that has n times been
4 determined as the ad for display higher than an ad that has been
5 determined as the ad for display more than n times.

1 23. The method of claim 14, wherein the step of
2 prioritizing multiple competing ads comprises
3 adjusting the priority of an ad, the adjustment based on
4 advertisements already displayed in the transaction.

1 24. The method of claim 14, wherein the step of
2 prioritizing multiple competing ads comprises
3 adjusting the priority of an ad for display when the
4 transaction meets predetermined criteria, that ad having already
5 been displayed, such that that ad does not display again in the
6 transaction.

1 25. The method of claim 14, wherein the step of
2 prioritizing multiple competing ads comprises
3 randomly setting the priority of an ad, with priority equal
4 to that of another ad, higher than the priority of the other ad.

1 26. The method of claim 14, further comprising the steps of
2 displaying the determined ad;
3 determining the next highest-priority ad, if any, as the ad
4 for display.

1 27. The method of claim 14, wherein the step of determining
2 further comprises
3 overriding the determination of the highest-priority ad as
4 the ad for display.

1 28. The method of claim 14, wherein the step of determining

2 further comprises
3 overriding the determination of the highest-priority ad as
4 the ad for display at most once per transaction.

1 29. The method of claim 1, wherein the step of determining
2 an ad for display comprises
3 reserving one of the time frames for ads for display without
4 regard to transaction criteria; and
5 when the one time frame is the reserved time frame, excluding
6 all ads for display when the transaction meets predetermined
7 criteria.

1 30. The method of claim 1, wherein the step of determining
2 an ad for display comprises
3 reserving all of the time frames for ads from a predetermined
4 set of sponsors, the set having a size of one or more.

1 31. The method of claim 30, further comprising the step of
2 nonetheless determining an ad to display when the transaction
3 meets predetermined criteria as the ad for display and preempting a
4 reserved time frame with the determined ad.

1 32. The method of claim 1, wherein the step of displaying
2 the ad comprises
3 displaying the ad in the one time frame.

1 33. The method of claim 1, wherein the step of displaying
2 the ad comprises
3 displaying the ad in a time frame following the one time
4 frame.

1 34. The method of claim 1, further comprising the step of
2 setting a minimum duration for the determined ad; and
3 the step of displaying the advertisement comprises
4 displaying the ad for that minimum duration.

1 35. The method of claim 1, further comprising the steps of
2 setting a system-wide minimum ad duration; and
3 setting a minimum ad duration for the ad, the minimum ad
4 duration a natural-number multiple of that system-wide minimum ad
5 duration; and
6 the step of displaying the advertisement comprises
7 displaying the ad for that minimum ad duration.

1 36. The method of claim 1, wherein the step of displaying
2 the advertisement comprises
3 displaying the beginning of the ad but not the end of the ad.

1 37. The method of claim 36, wherein the step of displaying
2 the advertisement comprises
3 displaying the beginning of the ad but not its end due to an
4 action of a consumer.

1 38. The method of claim 1, further comprising the step of
2 setting a minimum duration for the determined ad; and
3 the step of displaying the advertisement comprises
4 displaying the ad longer than that minimum duration due to an
5 action of a consumer.

1 39. The method of claim 1, wherein the step of displaying
2 comprises
3 displaying the determined ad and another ad in the one time

4 frame.

1 40. The method of claim 39, wherein the step of displaying
2 comprises
3 displaying in the one time frame the determined ad, having a
4 first sponsor, and the other ad, having a sponsor different from
5 the first sponsor.

1 41. The method of claim 1, further comprising the step of
2 responding to the ad.

1 42. The method of claim 41, wherein the step of responding
2 comprises
3 indicating one of consent and lack of consent to a
4 proposition of the ad.

1 43. The method of claim 41, wherein the step of responding
2 comprises
3 indicating one of consent and lack of consent to a
4 proposition of the ad by activating an input device at the POS
5 location.

1 44. The method of claim 41, further comprising the step of
2 recording a representation of the response.

1 45. The method of claim 41, further comprising the step of
2 communicating a representation of the response to a computer
3 system for collecting responses.

1 46. The method of claim 1, further comprising the step of
2 repeating the steps of determining and displaying an ad.

1 47. The method of claim 1, further comprising the steps of
2 advancing from the one time frame into another time frame;
3 and
4 repeating the steps of determining and displaying an ad with
5 the other time frame.

1 48. The method of claim 47, wherein the step of advancing
2 comprises
3 activating an input device at the POS location; and
4 in response, advancing from the one time frame into the other
5 time frame.

1 49. The method of claim 47, wherein the step of advancing
2 comprises
3 commanding from a POS system advancement from the one frame;
4 and
5 in response, advancing from the one time frame into the other
6 time frame.

1 50. The method of claim 47, wherein the step of advancing
2 comprises
3 recognizing that activity that the one frame spans has ended;
4 and
5 in response, advancing from the one time frame into the other
6 time frame.

1 51. The method of claim 47, wherein the step of advancing
2 comprises
3 recognizing that a timeout has occurred; and
4 in response, advancing from the one time frame into the other

5 time frame.

1 52. The method of claim 1, further comprising the step of
2 repeating the steps of determining and displaying an ad with
3 successive ones of the multiple time frames until the transaction
4 completes.

1 53. The method of claim 52, further comprising the step of
2 repeating the method from the step of dividing with a
3 subsequent transaction.

1 54. The method of claim 1, further comprising the step of
2 repeating the steps of determining and displaying an ad with
3 successive ones of the multiple time frames until a following
4 transaction begins.

1 55. The method of claim 1, further comprising the step of
2 where the displayed ad was an ad for display when the
3 transaction met predetermined criteria, disqualifying that ad from
4 displaying again in the transaction.

1 56. The method of claim 1, further comprising the step of
2 where the displayed ad was an ad that is for display without
3 regard to the specifics of the transaction and that originated in
4 an ad-management service, disqualifying that ad from displaying
5 again in the transaction.

1 57. The method of claim 1, further comprising the step of
2 receiving a first ad for display without regard to whether a
3 transaction meets predetermined criteria.

1 58. The method of claim 57, wherein the step of receiving
2 the first ad is performed before the step of dividing the transaction.

1 59. The method of claim 57, wherein the step of receiving
2 the first ad comprises
3 receiving, at a predetermined interval, ads for display
4 without regard to whether a transaction meets predetermined
5 criteria during the transaction.

1 ~~60~~. A method for displaying advertisements ("ads") at a
2 point-of-sale (POS) location, the method comprising:
3 receiving a first ad for display without regard to whether a
4 transaction meets predetermined criteria;
5 then engaging in a consumer transaction;
6 during the transaction, receiving a second ad for display
7 when the transaction meets predetermined criteria.

1 61. The method of claim 60, wherein the step of receiving
2 the first ad for display comprises
3 receiving, at a predetermined interval, ads for display
4 without regard to whether a transaction meets predetermined
5 criteria during the transaction.

1 62. The method of claim 60, further comprising the step of
2 during the transaction, displaying the first ad.

1 63. The method of claim 60, further comprising the step of
2 during the transaction, displaying the second ad.

1 64. The method of claim 60, further comprising the step of
2 during the transaction, displaying the first and second ads.

13 for purchase;

14 signing for a purchase;

15 thanking a consumer his purchase;

16 surveying a consumer;

17 promoting an event;

18 applying for a credit card;

19 informing a consumer;

20 identifying a consumer;

21 interacting with a consumer; and

22 passing through an interstitial period;

23 transmitting information about the transaction to an ad-

24 management service;

25 determining on the ad-management service, based on the

26 information, an ad for display;

27 receiving a response indicating the service-determined ad;

28 prioritizing any ads competing for display, producing an ad

29 with highest priority, by

30 setting the priority of an ad for display when

31 the transaction meets predetermined criteria (a

32 "specific ad") higher than the priority of an ad for

33 display when no specific ad is available;

34 determining the ad with highest priority as the ad for

35 display;

36 displaying the determined ad in one of (1) the one time frame

37 and (2) a frame following the one time frame

38 from its beginning but not through its end due to

39 an action of a consumer

40 but otherwise from its beginning through its end;

41 recording a representation of any response to the ad; and

42 repeating the steps of determining and displaying an ad with

43 successive ones of the multiple time frames until the transaction

44 completes.

1 68. A computer-readable medium for data storage wherein is
2 located a computer program for causing a POS system to display
3 advertisements ("ads") by
4 dividing a consumer transaction at a POS location into
5 multiple time frames;
6 determining an ad for display in one of the time frames; and
7 displaying the ad in one of the time frames.

1 69. The media of claim 68, wherein the step of dividing a
2 transaction into time frames comprises
3 dividing a transaction into time frames, one of the time
4 frames spanning one of the following transaction activities:
5 waiting for a consumer to begin a transaction;
6 greeting a consumer;
7 beginning a transaction;
8 selecting a form of payment;
9 swiping a card for a form of payment;
10 entering a security code for the form of payment;
11 identifying a product for purchase;
12 displaying a total cost for products identified
13 for purchase;
14 signing for a transaction; and
15 thanking a consumer his purchase.

1 70. A POS system displaying advertisement ("ads"),
2 comprising:
3 the computer-readable medium of claim 68;
4 a CPU for executing the program in the medium;
5 a bus, communicatively coupling the medium and the CPU; and
6 a display, responsive to commands from the CPU.

71. A computer-readable medium for data storage wherein is located a computer program for causing an advertising-management-service computer system to determine advertisements for presentation to multiple consumers at respective POS locations by substantially simultaneously receiving first and second requests for ads for display when a transaction meets predetermined criteria, each request transmitting respective information about respective consumer transactions occurring at respective POS locations; determining from the transmitted information that the first and second transactions are similar enough that one ad will satisfy both requests; responding to both requests with the same response indicating a determined ad for display.

72. An advertising-management service:
the computer-readable medium of claim 71;
a CPU for executing the program in the medium; and
a bus, communicatively coupling the medium and the CPU.

73. A consumer-transaction system comprising:
first and second instances of the POS system of claim 70;
the advertising-management service of claim 72; and
first and second links respectively and communicatively coupling the first and second instances of the POS system to the advertising-management service.